

Report of surveys on the early stages of butterflies in the Nanling area (2)

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Abstract This is the 2nd report of surveys on early stages of butterflies in the Nanling area. We observed about 10 more species, including larvae of *Mandarinia regalis*, *Nosea hainanensis*, *Byasa menci*us, *Athyma ranga*, *Euthalia rickettsi* and ova of *Sibatanozephyrus lijinae*.

Key words ovum, larva, pupa, Guangdong (China), *Mandarinia regalis*, *Nosea hainanensis*, *Byasa menci*us, *Athyma ranga*, *Euthalia rickettsi*, *Sibatanozephyrus lijinae*, Nanling Nature Reserve.

Introduction

We describe a continuing survey on the morphology, foodplants, and habits of early stages of butterflies in the Nanling area (Harada *et al.*, 2009). We made two visits during the year, in summer to study feeding and growth of larvae and the flight of mature adults, and in winter to study hibernation. We observed many species and have continued to record new data.

More than 500 species of butterflies are known from Guangdong, most of them from the Nanling mountain area.

Methods

The second year expeditions took place from November 29 - December 4, 2007 and June 7~12, 2008. During these periods we observed ova, larvae and pupae of many species of butterflies.

We also captured the following female butterflies and tried to obtain eggs in June.

Papilio protenor, *P. nephelus*, *P. bianor*, *Lethe ocellata*, *Melanitis leda*, *M. phaedima*, *Ypthima praenubila*, *Y. conjuncta*, *Neptis philyra*, *Ussuriana michaelis*, *Heliophorus ila*.

Result of Surveys

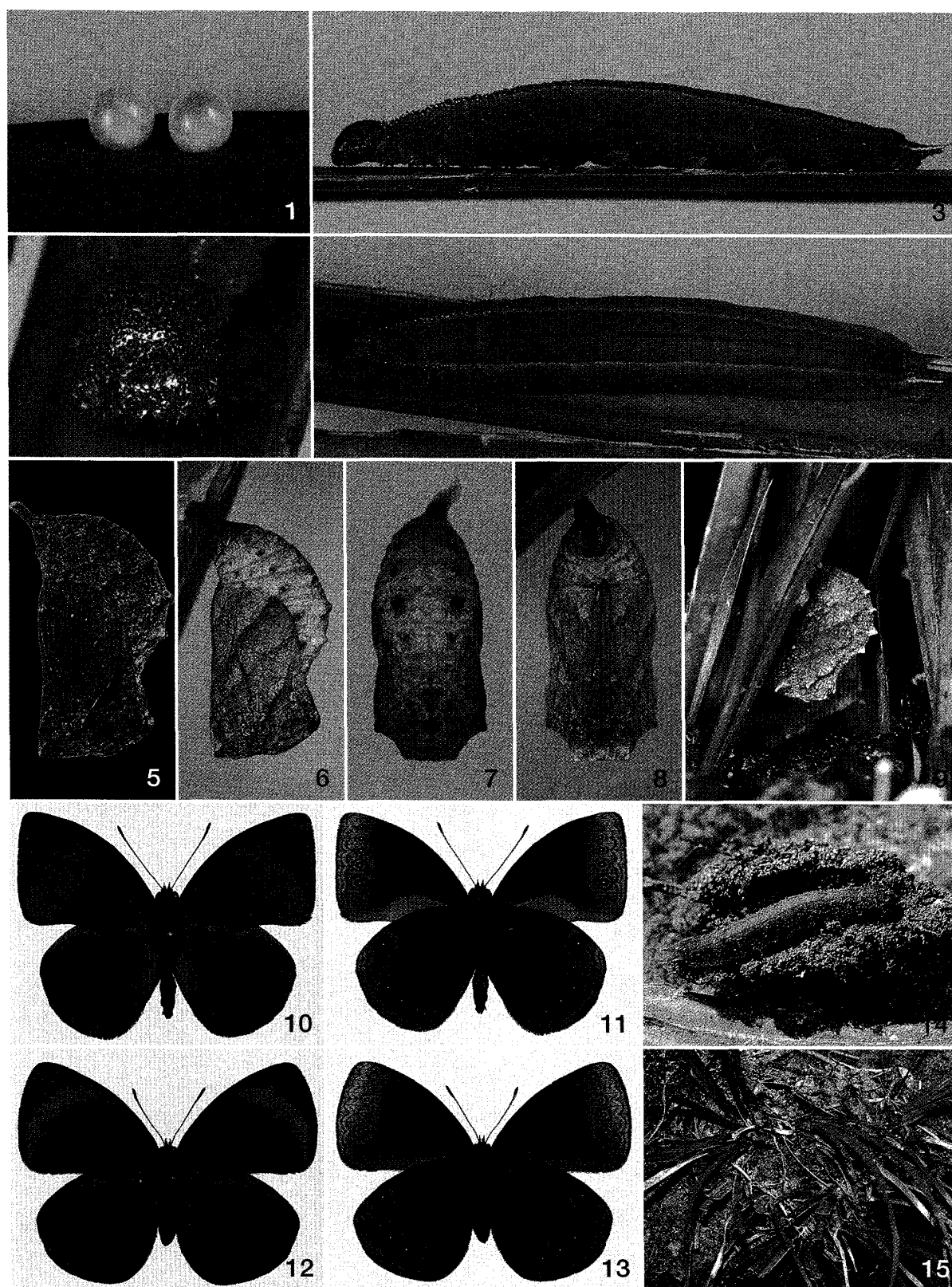
The species of which we found early stages for the first time, and their food plants are as follows:

SATYRIDAE

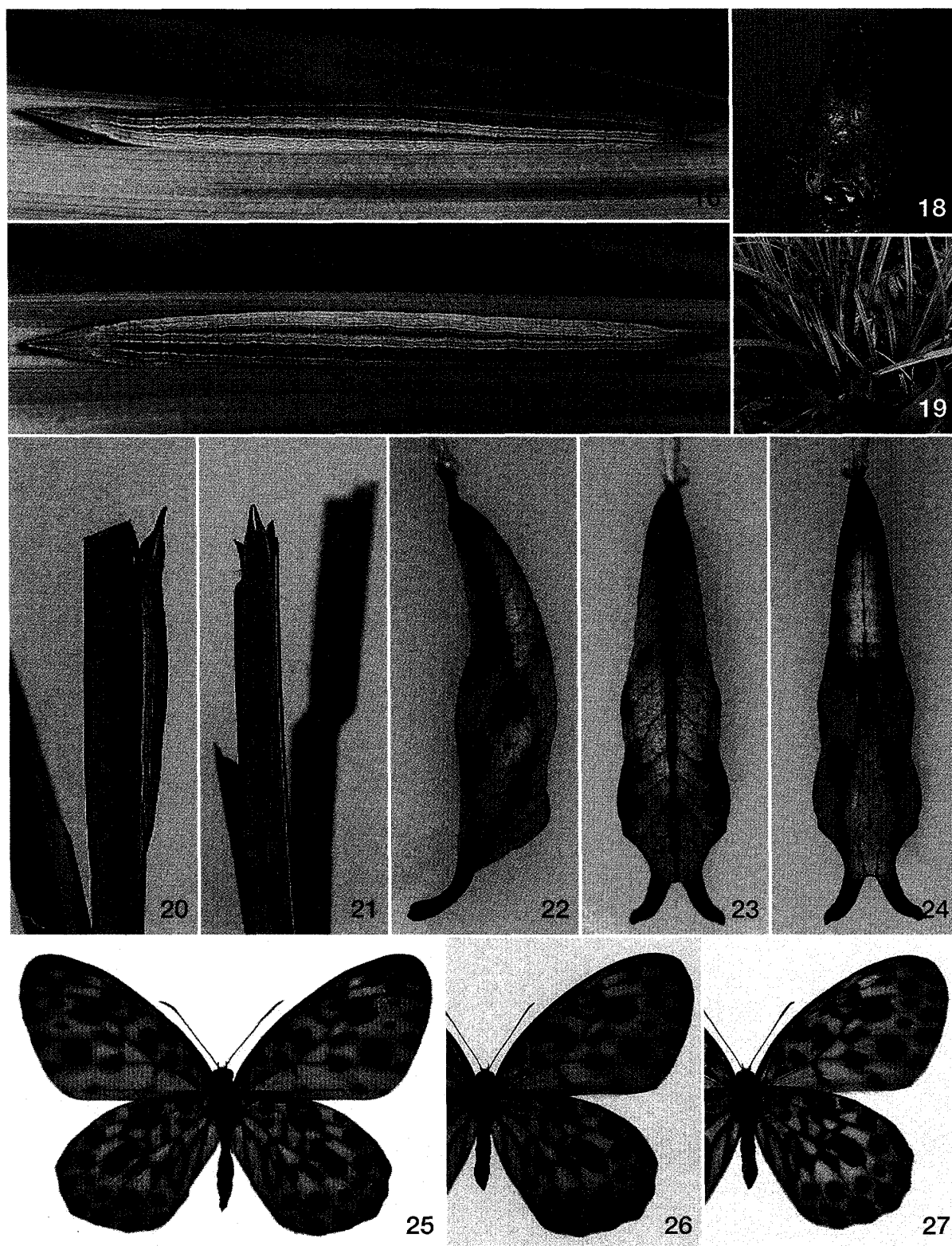
Lethe lanaris (Larva) *Phyllostachys* sp. / Gramineae

Mandarinia regalis (Larva) *Acorus gramineus* / Aracea

Nosea hainanensis (Larva) *Scleria terrestris* / Cyperaceae



Figs 1-15. *Mandarinia regalis*. 1. Ovum. 2. Last instar larva's head. 3-4. Last instar larva. 5-9. Pupa. 10-11. Male. 12-13. Female. 14. Overwintering larva. 15. Food plant.



Figs 16-27. *Nosea hainanensis*. 16-17. Last instar larva. 18. Last instar larva's head. 19. Food plant. 20-21. Overwintering larva. 22-24. Pupa. 25. Male. 26-27. Female.

NYMPHALIDAE

Neptis antilope (Larva) *Carpinus hupeana* / Betulaceae

Neptis themis (Larva) *Carpinus hupeana* / Betulaceae

Euthalia rickettsi (Larva) *Quercus oxyodon* / Fagaceae

Vanessa indica (Larva) *Ultica* sp. / Urticaceae

LYCAENIDAE

Sibatanozephyrus lijinae (Ovum) *Fagus longipetiolatus* / Fagaceae

Ravenna nivea (Ovum) *Quercus sessilifolia* / Fagaceae

Ussuriana michaelis (Ovum) *Fraxinus* sp. / Oleaceae

Tongeia potanini (Ovum) / *Didymocarpus* sp. / Gesneriaceae

We note some species of particular interest as follows:

(1) *Mandarinia regalis* (Figs 1–15)

This is the first report on the larva.

Habitat: Stony, rocky and shady streams in forest at altitudes of about 800–1200m.

Larval food plants: *Acorus gramineus* / Acoraceae

Larva: We found 1st, 2nd, 3rd, 4th and 5th instar larvae in winter, and continued to rear them.

The larvae remain close to the ground with their heads facing up, in some cases among the roots and in a simple nest spun in the sand. They grow very slowly in winter.

The food plants grow on wet rocks at the streamside, sometimes submerged in rising water. The larva is adapted to this environment.

Pupa: Pupation occurs on the lower part of the food plant or near plants, with the pupa suspended head downwards. The pupa is green or dark grayish green in color.

Flight: The butterfly is multivoltine.

(2) *Nosea hainanensis* (Figs 16–27)

The life history in the Nanling area was previously reported by Young and Chen (1999) with color photographs.

Habitat: Valley in forest about 500–1000m in altitude.

Larval food plants: *Scleria terrestris* / Cyperaceae

Larva: We found 3rd and 4th instar larvae in winter. The final instar is known to be the 6th. The larvae rest on the lower part of the upper surface of the leaf blade with their heads up.

The final instar changes from green to light brown in color.

Pupa: The pupation site is on the underside of the leaf blade suspended head downwards.

The pupa is yellowish in color with brownish markings all over, while many other satyrid pupae are monochrome brown, black or green.

Flight: The butterfly is bivoltine in May and August on Hainan Island. However, a 2nd generation is unknown in this area.

(3) *Sibatanozephyrus lijinae* (Figs 28–40)

This is the first report from the Nanling area.

Habitat: Along valleys about 800–1400m in altitude.

Larval food plant: *Fagus longipetiolatus* / Fagaceae

Ovum: Ova were usually found on side branches of trees growing on steep mountainsides, about 4–6 m above ground level.

Flight: The butterfly appears in May, and is univoltine.

(4) *Byasa menciis* (Figs 41–51)

We observed butterflies and larvae at an altitude of about 1000m in late June.

This is the first report of the early stages with photographs.

Habitat: Roadsides along valleys

Larval food plant: *Aristolochia tubiflora* / Aristolochiaceae Ovum: The ovum is laid singly on the underside of a larval food plant leaf.

Larva: The larva rests on the underside of the leaf, and the mature larva also rests on the stem.

Pupa: Pupation takes place on nearby plants.

Flight: The species is multivoltine.

(5) *Athyma ranga* (Figs 52–64)

This is the first report of the early stages with photographs.

Habitat: Around houses about 500–1000m in altitude.

Larval food plant: *Osmanthus fragrans* / Oleaceae

In India, *Orea dioica* and *Linociera malagarica* are also known as food plants.

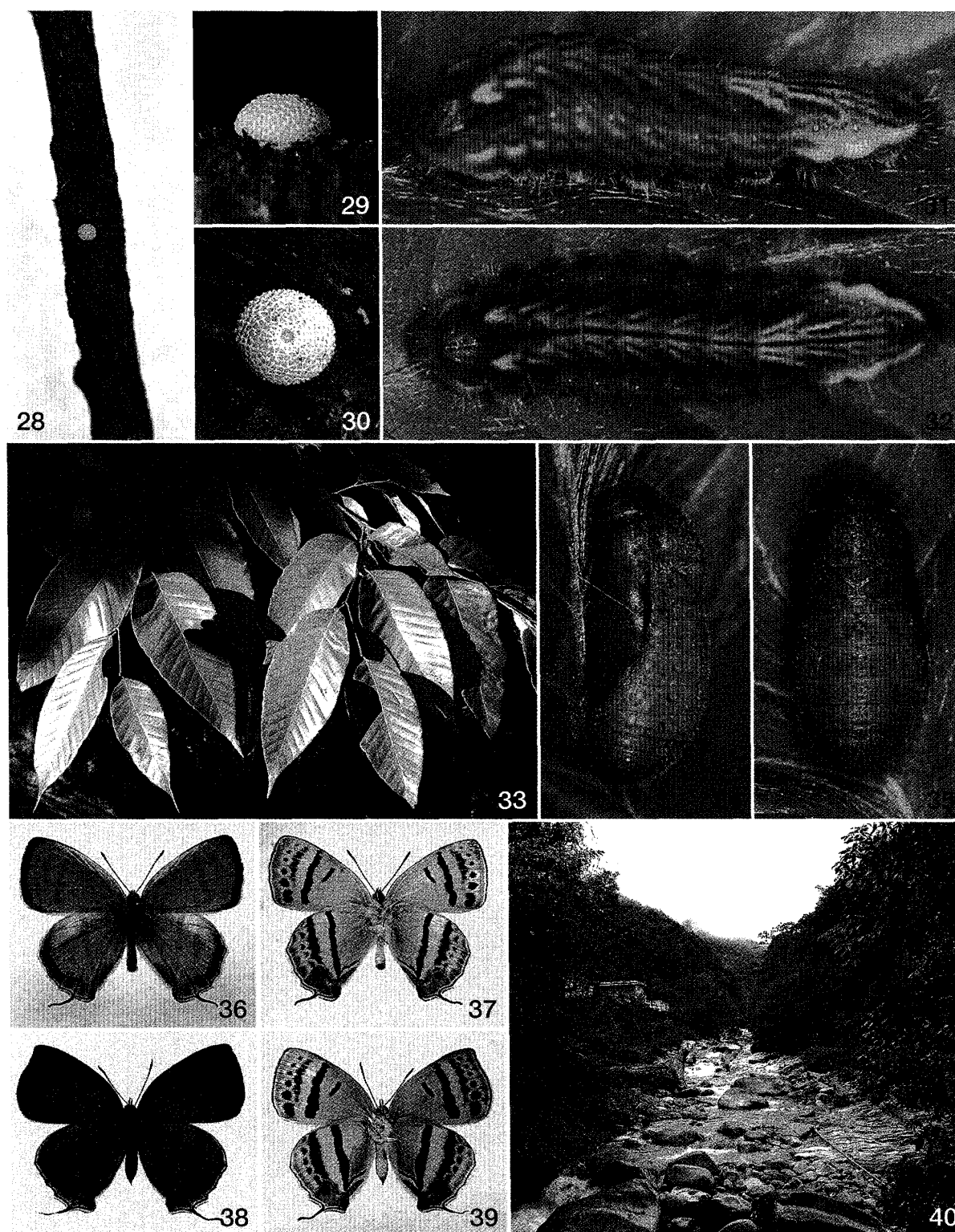
Larva: The young larva eats the leaf tip leaving the midrib untouched, and makes a rod-like extension with frass pellets spun together with silk. It grows slowly even in winter.

Pupa: The pupa is found on the underside of the leaf.

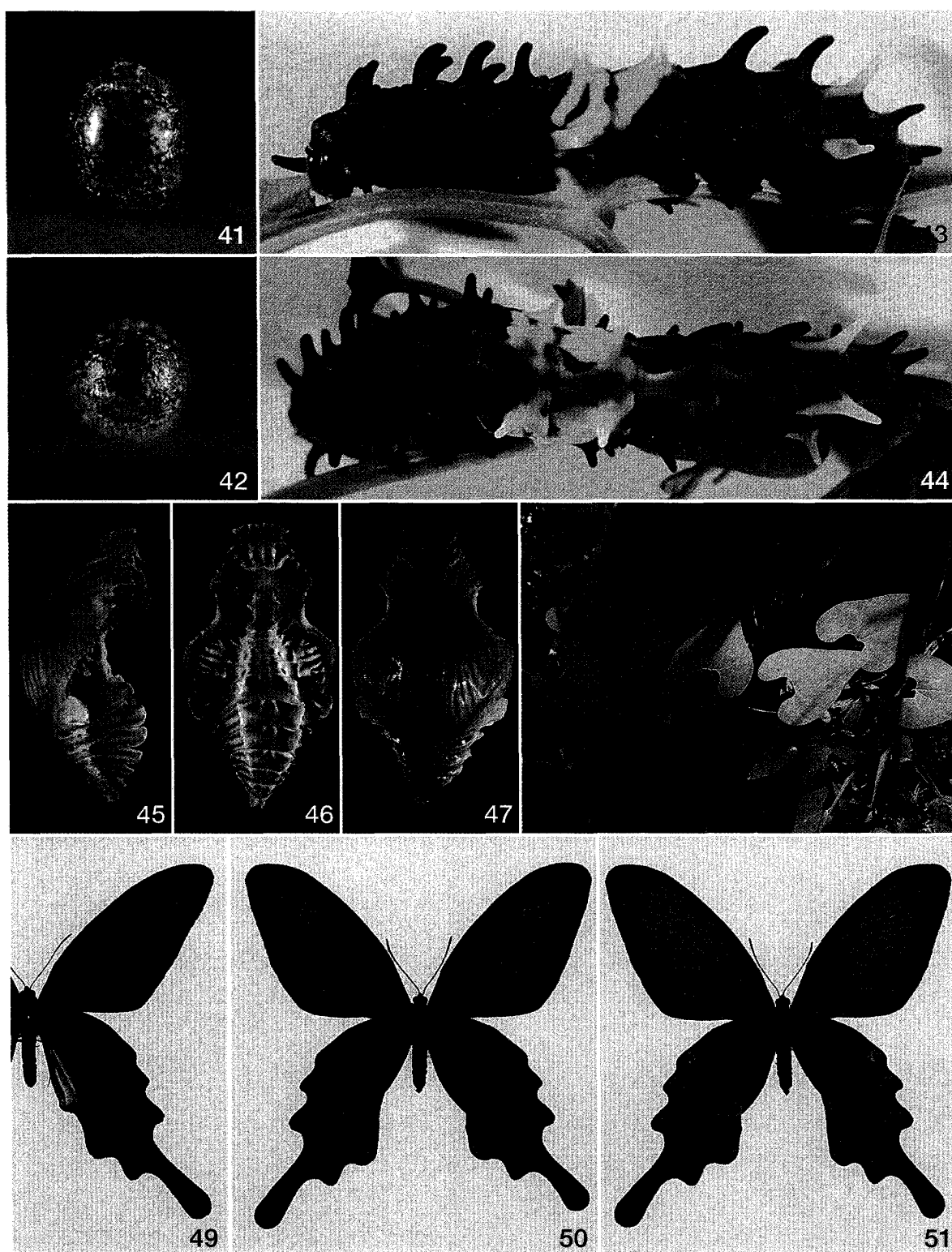
Flight: In winter, we observed the ova, larvae and pupae. The species is multivoltine.

(6) *Euthalia rickettsi* (Figs 65–74)

This is the first report of the early stages.



Figs 28–40. *Sibatanozephyrus lijinae*. 28–30. Ovum. 31–32. Larva. 33. Food plant. 34–35. Pupa. 36–37. Male. 38–39. Female. 40. Habitat at Nanling area 1,000–1,200m in altitude.



Figs 41-51. *Byasa menzius*. 41-42. Ovum. 43-44. Last instar larva. 45-47. Pupa. 49. Male. 50-51. Female.

Habitat: Along valleys about 1200m in altitude.

Larva: We observed overwintering larvae on leaves. They feed gradually even in winter.

Pupa: The pupae are found on the underside of the leaf of the food plant or nearby plants.

Flight: July.

Acknowledgements

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摘 要

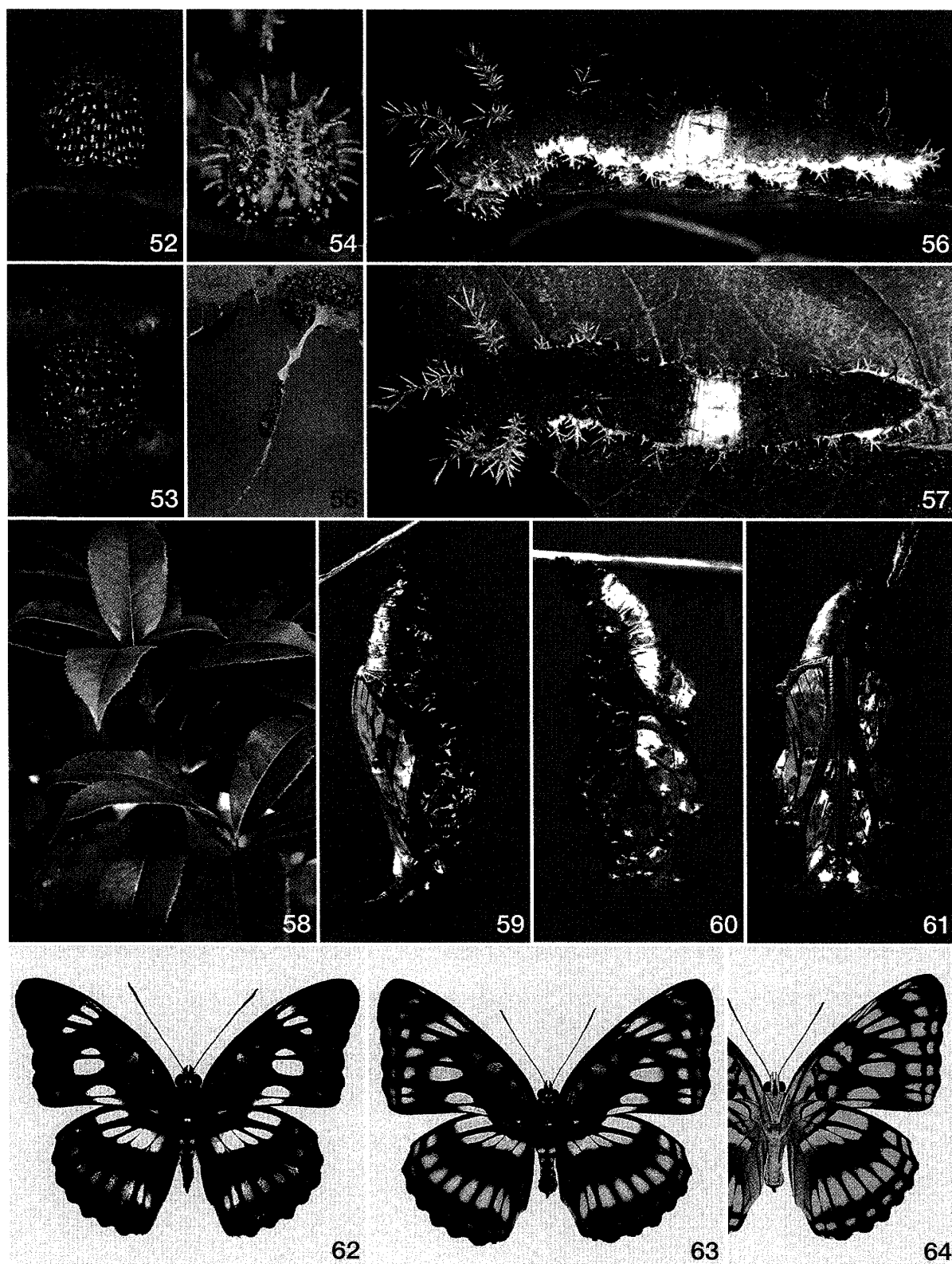
広東省南嶺地域における蝶の幼生期の調査 (2) (原田基弘・大島良美・吉田良和・王 敏)

我々は2006年の秋から広東省北部に位置する南嶺山地周辺に於いて蝶の幼生期探査のプロジェクトを続けている。第2年目の調査は2007年11月29日～12月4日および2008年6月7～12日に南嶺国家森林公园を中心とした地域で行った。

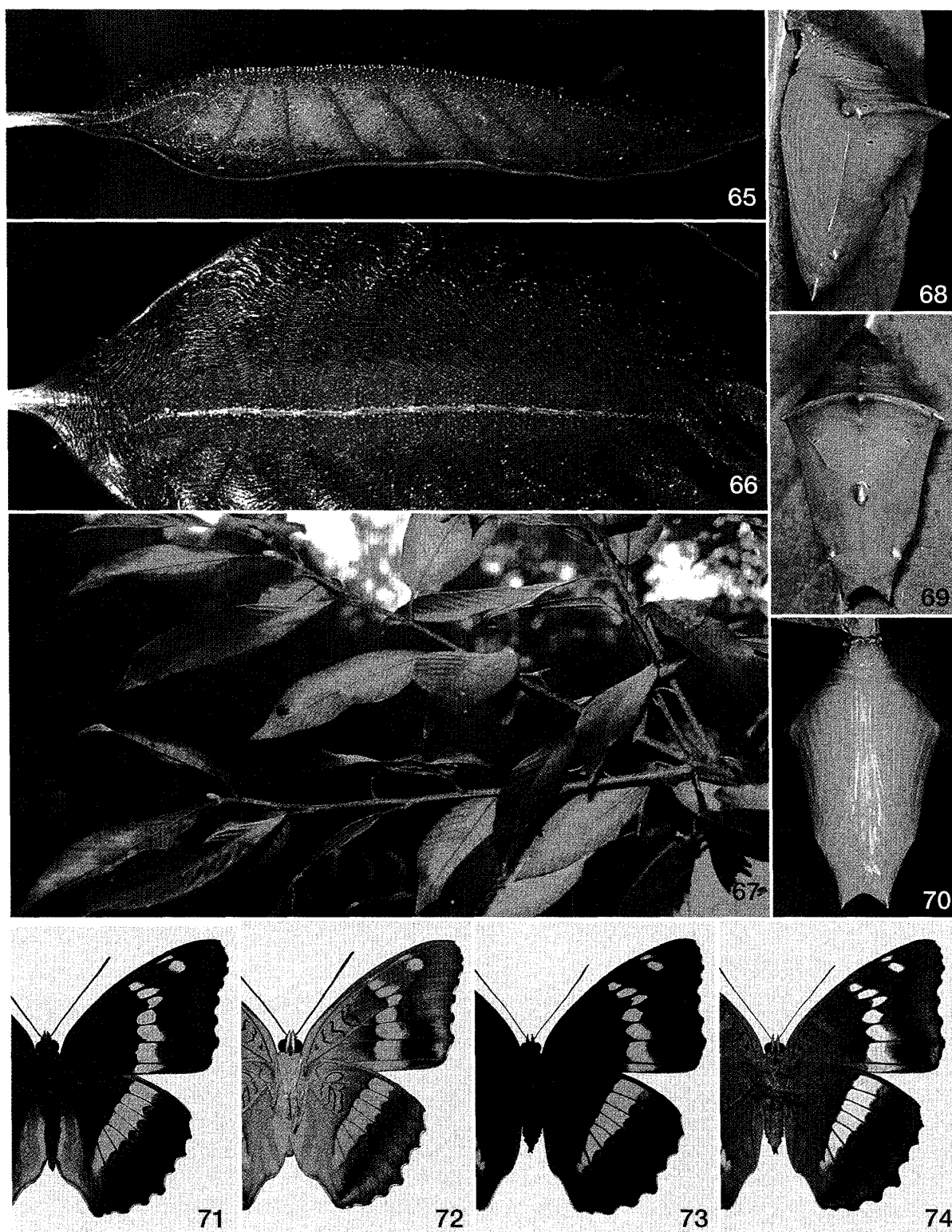
この調査ではさらに約10種の蝶の幼生が観察された。それらの食餌植物を示すとともに、新たに観察されたムラサキクロヒカゲの幼生期をはじめヒヨウマダラジャノメ、タイリクフジミドリシジミ、シナジャコウアゲハ、ランガイチモンジ、リケッチイナヅマについて記述し、生態写真を示した。

今回新たに見出されたムラサキクロヒカゲの幼虫は、岩礫の多い溪畔の水際に生えるショウブ科のセキシウを食餌とする特異な生態が観察された。

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Figs 52-64. *Athyma ranga*. 52-53. Ovum. 54. Last insar larva's head. 56-57. Larva.
 58. Food plant. 59-61. Pupa. 62. Male. 63-64. Female.



Figs 65-74. *Euthalia rickettsi*. 65-66. Last instar larva. 67. Food plant. 68-70. Pupa.
71-72. Male. 73-74. Female.